

STANDARD PAPER

# Evaluating the Implementation of a Multi-Technology Delivery of a Mental Health and Wellbeing System of Care Within a Youth Sports Development Program During the COVID-19 Pandemic

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## Abstract

The COVID-19 pandemic presents challenges to the provision of community programs and access to mental health services for young people. We examined the feasibility, reach, and acceptability of multi-technology delivery of an integrated system that assesses and provides feedback on youth mental health and wellbeing and connects them to care within the context of a youth sports development program. The system was delivered via computer, telephone, and teleconference with 66 adolescent boys participating in a rugby league development program in three communities in Australia. Young people completed online wellbeing and mental health measures (Assess step), parents were provided with telephone feedback on results, support, and referral options (Reflect step), and youth received teleconferenced workshops and online resources (Connect step). The multi-technology delivery was feasible to implement, and reach was high, with barriers experienced at the Assess step but minimally experienced at the Reflect and Connect steps. Delivering the system via multiple forms of technology was rated as highly beneficial and enjoyable by young people. Players improved in self-reported prosocial behaviour, gratitude, and anxiety symptoms from pre- to post-program. Strong collaboration between researchers, organisational personnel, and community members is important for achieving these outcomes.

**Keywords:** mental health; organised sport; youth; multi-technology

## Introduction

The COVID-19 pandemic has presented challenges to the provision of community youth sports programs and mental health services for young people (Kelly, Erickson, & Turnnidge, 2020; Witt, Ordóñez, Martin, Vitiello, & Fegert, 2020). Federal and state government public health strategies to mitigate the transmission of COVID-19 through physical distancing and social isolation brought community programs, including youth sports programs, to an impromptu halt globally (Parnell, Widdop, Bond, & Wilson, 2020) and required rapid transformation of service delivery by the mental health care sector (Kopelovich et al., 2021). These changes have been described as having significant detrimental effects given the important role that community-level sport plays in promoting positive social, emotional, cultural, and economic outcomes (e.g., SportAus, 2020; Sport England, 2020; Sport New Zealand, 2020),

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and mental health care services provider in supporting vulnerable young people and their families generally, and particularly during crises (Czeisler, Howard, & Rajaratnam, 2021; Witt *et al.*, 2020).

As the pandemic continues to develop, and nations respond with prevention (e.g., physical distancing, mask wearing, vaccination programs) and intervention strategies (e.g., stay-at-home orders), youth sports organisations and the mental health community, including researchers and practitioners, are continuously adapting and developing measures to support youth in returning to play and receiving the mental health care they need (Hughes, 2020; Hughes *et al.*, 2020; Witt *et al.*, 2020). In sports contexts, this involves individuals, families, coaches, and organisational personnel adhering to physical distancing guidelines, safe return-to-play protocols, and undertaking COVID-19 training for sports gatherings (e.g., Hughes *et al.*, 2020). As no established framework or best-practice guidelines yet exist for making these adaptations, mental health professionals have had to become creative in order to continue serving young people, and early evidence suggests positive support for the accelerated uptake of tele-mental health, internet-based, and mobile app-based interventions (i.e., Rauschenberg *et al.*, 2021).

The present study represents one successful example and is a synthesis of youth sports program strategies and mental health service adaptations to ensure the continued provision of an integrated youth sports development program for 12 to 15-year-old, Australian rugby league players during the COVID-19 pandemic when travel restrictions, border closures, and quarantine procedures prevented its original in-person delivery. In prior studies, we successfully co-designed and co-delivered an integrated mental health and wellbeing system of care (i.e., Life-Fit-Learning) within the context of the rugby league youth development program and school-based programs to enhance reach, and accessibility to, mental health support for young people (Dowell *et al.*, 2021; Waters *et al.*, 2021). The system involves a three-step approach aimed at assessing young peoples' mental health and wellbeing via self-report (Assess step), providing immediate feedback (Reflect step), and connecting them to mental health and wellbeing programs and resources proportionate to their needs and the services available in their communities (Connect step).

The Life-Fit-Learning system was developed based on core tenets of ecological systems theory (Bronfenbrenner, 1979), community-based participatory research (CBPR) frameworks (Minkler & Wallerstein, 2003), and implementation science frameworks (Nilson, 2015). It recognises the interplay of multiple community contexts that influence and are influenced by, young people, that any effort to reach young people in the communities in which they live must be done in close partnership with community stakeholders and consumers, and that the scientific study of the process and methods of integrating research findings and evidence-based practices within settings is essential to improve the quality and effectiveness of health services and care (e.g., Eccles & Mittman, 2006; Greenberg, Domitrovich, Graczyk, & Zins, 2005; Rabin & Brownson, 2012).

In our prior study with junior rugby league players (e.g., Dowell *et al.*, 2021), the Assess and Reflect steps were conducted online and via telephone, while the Connect step involved a combination of telephone support, access to digital psychoeducation resources, and 4× in-person workshops with players and their coaches. In this previous study with 74 Australian junior rugby league players, the integrated system was found to be feasible to implement, highly acceptable to players, and efficacious in reducing anxiety and depression symptoms and improving personal strengths.

The aim of the present study was to determine the feasibility and acceptability when the entire system was delivered via computer (Assess and Connect steps), telephone (Reflect and Connect steps), and teleconference (Connect step) due to COVID-19 restrictions. It was hypothesised that the Life-Fit-Learning system would (a) produce strong feasibility ratings (as defined by the percentage of successful applications of the system without encountering obstacles), (b) produce a high degree of reach within each setting (as defined by the percentage of participants receiving each step of the system), and (c) produce high acceptability ratings (as defined by high end-user satisfaction ratings of the system). A secondary aim was to examine pre- to post-RISE program changes in mental health symptoms of anxiety, depression, and behavioural problems and personal strengths of grit, gratitude, and prosocial behaviour.

## Method

### Participants

A total of 71 male adolescents initially enrolled in the RISE Rugby League Development Program for Australian junior rugby players. The National Rugby League (NRL) developed the program in conjunction with Griffith University clinical and developmental psychology experts.

The NRL recruited boys (aged 12–15 years) into the program via advertising on their website and information circulated to their junior sport clubs in each region prior to the season. Of the 71 participants, five from Location C withdrew from the program before commencing. This resulted in a total sample of 66 boys (12–15 years of age;  $M$  age = 13.21;  $SD$  = 0.79) who registered for the RISE program: Location A,  $n$  = 36; Location B,  $n$  = 20; Location C,  $n$  = 10. Of these, 43 players (65.2%) completed the Assess and Reflect steps at pre- and post-assessment; Location A,  $n$  = 17 ( $n$  = 4 did not complete the Pre-RISE Assess step;  $n$  = 15 did not complete the Post-RISE Assess step); Location B,  $n$  = 17 ( $n$  = 3 did not complete the Post-RISE Assess step); and Location C,  $n$  = 9 ( $n$  = 1 did not complete the Pre-RISE Assess step). The parents of two participants were uncontactable at the post-RISE Reflect Step assessment at Location A. All players received the teleconferenced Life-Fit-Learning workshops during the RISE training sessions. Additional demographic information is provided in [Table 1](#).

### Measures and Materials

#### Feasibility

This was operationalised as the practicality and ease of delivering the Life-Fit-Learning system via multiple forms of technology (Bowen et al., 2009), using a feasibility rating framework (e.g., Pears et al., 2016) developed and applied by Waters et al. (2021). Ratings were based on feedback from members of

**Table 1** Demographic Information and Outcome Measures for Young People Who Completed All Steps of the Life-Fit-Learning System and Those Who Completed the Reflect and Connect Steps But Not the Assess Step

Measure	Completed both Assess steps, Reflect and Connect Steps ( $N$ = 43)		Completed Pre-Assess step, Reflect and Connect Steps but not the Post-Assess step ( $N$ = 18) <sup>a</sup>
	Pre-RISE	Post-RISE	Pre-RISE
Age (years/ $SD$ )	13.58 (0.85)		13.21 (0.79)
Living situation:			
Lives with both parents ( $N$ /%)	37 (86%)		12 (66.7%)
Lives with mother ( $N$ /%)	6 (14%)		6 (33.3%)
	$M$ ( $SD$ )	$M$ ( $SD$ )	$M$ ( $SD$ )
Anxiety	5.81 (3.83)	4.51 (3.89)	7.94 (4.66)
Depression	6.00 (3.64)	4.95 (3.51)	8.00 (3.00)
Behavioural problems	2.09 (1.68)	1.70 (1.74)	2.38 (1.59)
Prosocial behaviours	8.28 (1.75)	8.93 (1.30)	7.65 (1.84)
Grit	4.60 (0.80)	4.53 (0.76)	4.63 (0.78)
Gratitude	34.44 (5.22)	35.91 (4.26)	32.67 (6.08)
Satisfaction ratings			
Enjoyable	–	5.58 (0.78)	–
Learning	–	5.24 (1.22)	–

Note: <sup>a</sup> $N$  = 5 participants did not complete the pre-RISE Assess step.

the research team and recorded in project meetings and were based on the extent to which obstacles and challenges were experienced during the implementation of each step of the Life-Fit-Learning system (e.g., failed Assess step administration, not all youth completed the Assess step, unable to contact parents to provide Reflect step feedback, technical problems delivering workshops via teleconference).

Ratings were based on the research teams' report of obstacles given they were involved in all facets of program implementation (e.g., back-end project registration to youth connection to services) (see [Figure 1](#)). Ratings ranged from 3 (successful without obstacles to implementation), through 2 (successful with some obstacles to implementation), to 1 (unsuccessful due to obstacles encountered during implementation). The total feasibility rating was formed by summing feasibility scores at each step of the system (i.e., Assess, Reflect, Connect) at each location and using the total score as a percentage of the total possible score for each location. A higher score reflected a more successful implementation process with fewer obstacles.

### *Reach*

This refers to the percentage of persons who receive, or are affected by, a policy or program (Glasgow, Vogt, & Boles, 1999). Therefore, reach was defined as the percentage of young people at each location who were accessed at each stage of the Life-Fit-Learning system (i.e., Assess step, Reflect step, Connect step), as well as the proportion of parents accessed at each location for the Reflect step.

### *End-user acceptability*

This was defined as the extent to which end-users of the Life-Fit-Learning system found the experience to be satisfactory and informative. A text message was sent to the mobile phone number provided at registration, requesting players to provide answers to the following two questions assessing program satisfaction; (1) *How helpful did you find the Life-Fit workshops?* (2) *How enjoyable did you find the Life-Fit workshops?* Response options ranged from 1 (*not at all*) to 6 (*very much*).

### *Anxiety*

The Revised Children's Anxiety and Depression Scale (RCADS-25; 52; Chorpita, Yim, Moffitt, Umemoto, & Francis, 2000) Anxiety Subscale (15 items) was used to assess anxiety symptoms. A sample item is: 'I worry when I think I have done poorly at something' (0 = *never*, 3 = *always*). Summing the items results in a possible range of scores from 0 to 45, with a higher score indicating a higher level of anxiety symptomology (Cronbach's  $\alpha = .79$  at pre-assessment and  $\alpha = .84$  at post-assessment).

### *Depression*

The RCADS-25 Depression Subscale (10 items; Chorpita et al., 2000) was used to assess depressive symptoms. A sample item is: 'I feel sad or empty' (0 = *never*, 3 = *always*). Summing the items results in a possible range of scores from 0 to 30, with a higher score indicating a higher level of depressive symptomology (Cronbach's  $\alpha = .76$  and  $\alpha = .77$  at pre- and post-assessment, respectively).

### *Behavioural problems*

The Strengths and Difficulties Questionnaire (SDQ; 53; Goodman, 1997) Conduct Problems Subscale (5 items) was used to assess difficulties related to anger and externalising behaviours. A sample item is: 'I get very angry and often lose my temper' (0 = *not true*, 2 = *certainly true*). Summing the items results in a possible range of scores from 0 to 10, with a higher score indicating a higher level of anger and externalising difficulties (Cronbach's  $\alpha = .55$  and  $\alpha = .57$  at pre- and post-assessment, respectively).

### *Grit*

The Academic Grit Scale (10 items; 54; Duckworth, Peterson, Matthews, & Kelly, 2007) was used to assess levels of consistency of interest and perseverance towards long-term goals in general, without reference to academic activity in particular. A sample item is: 'I keep trying even after I fail' (1 = *definitely not like me*, 6 = *definitely like me*). Averaging the items results in a possible

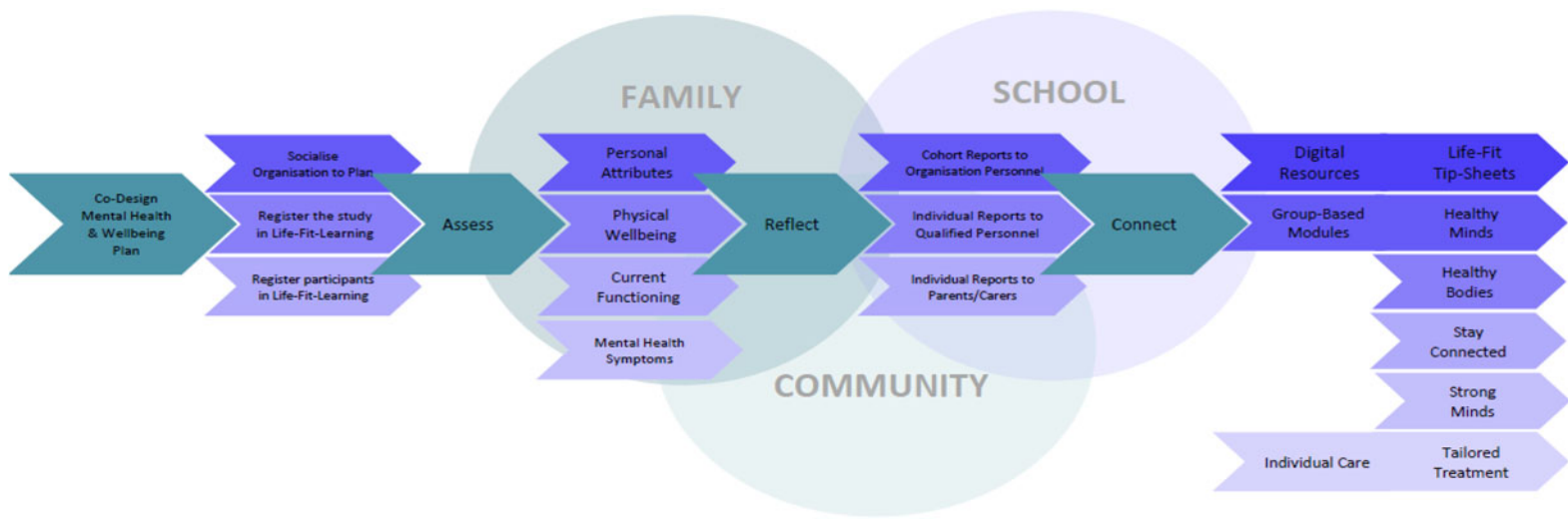


Figure 1. The major components of the life-fit-learning system.

range of scores from 1 to 6, with a higher score indicating a higher level of grit (Cronbach's  $\alpha = .85$  and  $\alpha = .77$  at pre- and post-assessment, respectively).

### *Prosocial behaviours*

The SDQ (53) Prosocial Behaviours Subscale (5 items; Goodman, 1997) was used to assess prosocial behaviours. A sample item is: 'I try to be nice to other people. I care about their feelings' (0 = *not true*, 2 = *certainly true*). Summing the items results in a possible range of scores from 0 to 10, with a higher score indicating a higher level of prosocial behaviour (Cronbach's  $\alpha = .74$  and  $\alpha = .68$  at pre- and post-assessment, respectively).

### *Gratitude*

Gratitude was assessed using the Gratitude Questionnaire (GC-6; 6 items; 56; McCullough, Emmons, & Tsang, 2002), which measures the extent to which an individual possesses a grateful disposition. A sample item is 'I have so much in life to be thankful for' (0 = *strongly disagree*, 6 = *strongly agree*). Summing the items results in a possible range of scores from 6 to 42, with a higher score indicating a higher level of gratitude. Scores can also be interpreted in percentile ranges (Sansone & Sansone, 2010) (Cronbach's  $\alpha = .76$  and  $\alpha = .71$  at pre- and post-assessment, respectively).

### *Parent follow-up measures*

Parents of participants were contacted via telephone following the post-assessment to ask about action taken as a result of having received individual feedback about their son, and were asked to choose one of the following five response options: (1) No action taken; (2) Conversations with their son and working on the problems together; (3) Sought additional information about their son's difficulties from websites and other resources; (4) Sought professional assistance for their son; (5) Were already receiving support at the time of the assessment. Parents were also asked about improvements in their son's wellbeing since receiving the feedback with a single item, with response options ranging from 1 (*much worse*) to 5 (*much improved*).

### *Procedure*

The study had full ethical approval (GU HREC: 2018/426). The Life-Fit-Learning System (see Figure 1 and Waters *et al.*, 2021) was implemented within the rugby league development program. Players received written informed consent from parents/carers at the initial RISE induction session in their local communities where parents were informed about the Life-Fit component by the head coach of the program, provided with the information sheet, and asked to sign and return the consent form to the coach who then mailed them to the research team. After being registered in the Life-Fit System, young people received an email with a link to the Assess step where they completed all measures. After submitting their responses, all participants received an email with a link to the Life-Fit-Learning website where they could download the Life-Fit Tip Sheets that provide psychoeducational resources on all topics covered within the Life-Fit system.

Individual and cohort level Reflect Reports summarised participant scores as being in the healthy, possible risk, or probable risk ranges based on age- and gender-established cut-off values, normative data, or national recommendations (see Waters *et al.*, 2021 for details). Reports were reviewed by the first, second, and third authors and emailed to parents/carers of participants. The Connect step procedures were then initiated.

All participants received group-based, modularised workshops delivered via telehealth using Microsoft Teams with two facilitators located in a therapy room at the Griffith University Psychology Clinic and the participants located in the clubhouse of the rugby league grounds at which they were participating in the RISE program in their local community. The Life-Fit workshops were between 30 and 40 min in duration and conducted by groups of players in rotation with the rugby league tactical skills component and the strength and conditioning component during each

RISE session. The workshops were co-delivered at each location by two of three provisionally registered psychologists completing Masters-level training in clinical psychology at Griffith University. Each facilitator delivered the workshops with one co-facilitator at one location and the other co-facilitator at the other. They followed a detailed facilitator's manual and received weekly supervision from the first and second authors. The players also received a detailed Life-Fit-Learning workbook. Workshop content included: (1) Healthy Habits: emphasising the healthy consumption of vegetables, fruit and water, adequate sleep, and social media usage, (2) Strong Minds: emphasising grit and optimism, (3) Keep Cool: emphasising breathing, muscle relaxation, and mindfulness to manage emotions, and (4) Stay Connected: emphasising acts of kindness and gratitude (see Dowell et al., 2021; Waters et al., 2021 for further details). Within the week after completing the program, text messages were sent to the players, or their parents/carers mobile phone, with the satisfaction rating questions to which the players replied with their responses.

In addition to the telehealth workshops, parents of participants scoring in the possible or probable risk ranges for anxiety, depression, and anger/conduct problems at pre-assessment were telephoned by a registered psychologist on the Life-Fit team to provide feedback, referral options, and strategies for assisting their child. The Life-Fit Tip Sheets were also emailed to them directly.

After completion of the RISE program, participants were again provided with a link to the Assess step. After completion of the post-assessment, cohort, and individual Reflect reports were generated, and parents of the participants identified as being in the at-risk ranges at pre-assessment were telephoned to obtain information on the action taken since the pre-assessment and to evaluate the child's progress. Regardless of their child's risk status at post-assessment, parents were emailed the Life-Fit-Learning Tip Sheets again to ensure access to these resources over time. If any participants were identified in the high-risk ranges at post-assessment but not pre-assessment, their parents were telephoned and provided with feedback and referral options. Mental health and wellbeing scores at pre- to post-RISE were compared using *t*-tests.

## Results

### Feasibility

Feasibility ratings for each step in the Life-Fit system for each location are presented in Table 2. As can be seen, total scores ranged from 7.0 to 7.75 of a possible total score of 9. In terms of the Assess step, feasibility scores ranged from 2.0 (Location A) to 2.5 (Locations B and C). In Location A, the major obstacle was non-completions at either assessment time-point but especially at post-RISE (pre-RISE:  $n = 4$ ; post-RISE:  $n = 15$ ), resulting in only 47.2% of participants completing both assessments. In Locations B and C, very few participants failed to complete the pre-RISE assessments (Location C:  $n = 1$ ) or post-RISE assessments (Location B:  $n = 3$ ) (i.e., 85 and 90% completions respectively). There were no significant differences between those participants who did and did not complete the post-RISE Assess step (see Table 1). However, based on experience working with program managers at each location and observation during the final telehealth workshops, there was greater coach/personnel engagement in Locations B and C compared to Location A, in terms of reinforcing completion of the Assess step at each time-point.

The Reflect step was feasible to implement in Locations B and C without any obstacles (ratings of 3.0), with either no young people scoring in the high-risk range and thus not requiring parental follow-up

**Table 2** Feasibility Ratings for Each Step of the Life-Fit-Learning System and a Combined Total for Each Location

Location	Assess	Reflect	Connect	Total
Location A	2.0	2.0	3.0	7.0
Location B	2.5	3.0	2.25	7.75
Location C	2.5	3.0	2.75	7.75

(Location B), or all parents of young people in the high-risk range being contactable at both time-points to provide feedback and follow-up support (Location C). Two parents in Location A were unable to be contacted for the post-RISE follow-up call (rating of 2.0) resulting in a lower feasibility rating than that observed for Locations B and C. It should be noted; however, that Location A had a larger number of participants, and therefore a greater number of participants scoring in the high-risk ranges who then required parental follow-up.

Feasibility scores for conducting the Connect step workshops via teleconference ranged from 2.25 (Location B and C) to 3.0 (Location A). All sessions were able to be implemented at Location A without obstacles. At Location B, internet problems resulted in notable lags during the delivery of one session (rating of 2.0), and time changes due to the introduction of daylight saving resulted in one session being undeliverable via teleconference (rating of 1). At Location C, three sessions were implemented without obstacles, and audio difficulties were encountered during one session requiring players to sit very close to the laptop to hear the facilitators and to move further forward to the laptop when talking (rating of 2).

### Reach

As shown in Table 3, greater proportions of young people were accessed across all steps of the Life-Fit system in Locations B and C (85–100%) than Location A (47–100%). Higher proportions at Locations B and C were primarily due to almost all young people completing the Assess step at both time-points in Locations B and C, but not in Location A.

In terms of reach at the Reflect step, of the participants who scored within the high-risk range on at least one mental health measure at pre-assessment (20.1%;  $n = 9$  in Location A;  $n = 1$  in Location C), 8 parents (80%) provided additional feedback and referral information at post-assessment to evaluate any action they took to assist their child. The two uncontactable parents were from Location A.

In terms of reach at the Connect Step, although one session was not delivered in Location C (see Feasibility), 100% of young people were accessed overall via the teleconferenced Life-Fit workshops delivered during the RISE training sessions.

### End-User Acceptability

The average ratings of the degree of helpfulness and enjoyment of the Life-Fit workshops are shown in Table 1. Ratings for both measures were within the “a lot” to “very much” range on average across locations, suggesting a high degree of end-user acceptability.

### Mental Health and Wellbeing

Table 1 presents the mean mental health and wellbeing outcome measure scores pre- and post-RISE for all participants combined. As can be seen in Table 1, mean prosocial behaviours and grit scores were in the normative range at pre- and post-RISE, whereas mean gratitude scores were in the 25th

**Table 3** Total Number of Participants Accessed at Each Location as Well as Percentage (and  $N$  in Parentheses) of Total Number Accessed at Each Step of the Life-Fit-Learning System

Location	$N$	Assess	Reflect	Connect
Location A	36	47.2% (17)	25% (9)	100% (36)
Location B	20	85% (17)	–	100% (20)
Location C	10	100% (9)	10% (1)	100% (10)
Total	66	65.2% (43)	21.7% (10)	100% (66)

Note: Percentage reflects the number of participants (in parentheses) of  $N$  at each location who were accessed at that step.



percentile at pre-RISE and improved to within the 50th percentile at post-RISE. Pre- to post-RISE prosocial behaviours, paired  $t(42) = 2.67, p = .011$ , and gratitude scores, paired  $t(42) = 2.09, p = .042$ , increased significantly, whereas grit showed no significant change, paired  $t(42) = 0.89, p = .38$ . Mean anxiety, depression, and behavioural problem scores were in the healthy range on average at pre-RISE assessment. Nevertheless, there was a significant reduction from pre- to post-RISE in anxiety scores, paired  $t(42) = 2.28, p = .027$ , but not in depression, paired  $t(42) = 2.14, p = .06$ , or behavioural problem scores,  $t(42) = 1.50, p = .14$ .

In terms of the 10 young people scoring in the high-risk ranges, all contactable parents (80%) reported taking some form of action, including having discussions with their son about his difficulties and working on the problems together; three parents (37.5%) additionally reported that their son was now seeing a psychologist or other mental health professional; and four parents (50%) reported taking other action such as looking up mental health websites, using the Life-Fit tip sheets, or speaking to their son's teacher. When asked to rate participant improvement as a result of actions taken, six of the eight contactable parents (75%) reported some or much improvement, and two (25%) reported no change (both were parents who reported only speaking with their son).

At post-assessment, all 10 participants identified as being in the at-risk range at pre-assessment completed the post-assessment. At post-assessment, eight participants (80%) were in the normal range on all areas that were in the risk range at pre-assessment and two participants (20%) from Location A (those whose parents were uncontactable at post-assessment), remained in the at-risk range for anger/conduct problems. No participants were identified as being at-risk at post-assessment who were not identified at pre-assessment.

## Discussion

The COVID-19 pandemic has presented challenges to the provision of community sports programs and mental health care for young people. We examined the feasibility, reach, and acceptability of a multi-technology delivered mental health and wellbeing system of care within a community youth sports program in three communities in Australia. All components of the system were delivered via computer, telephone, and teleconference. The system was found to be feasible to implement in all locations, most young people were accessed at each step of the system (with the exception of the post-RISE assessment), and it was found to be highly acceptable to young people overall. In addition, in the context of scores that were primarily in the normative ranges at pre-assessment, significant improvements in gratitude, prosocial behavior, and anxiety symptoms were observed, whereas there were no significant changes in depression, behavioural problems and grit.

The study identified significant enablers of, and barriers to, successful implementation of the system via a multi-technology format. The observation that 5 participants did not complete the pre-RISE assessment and 18 participants did not complete the post-RISE assessment was a significant barrier to successful implementation and reach of the Assess step and has been observed in our prior studies that included greater in-person delivery (Dowell et al., 2021; Waters et al., 2021). An identified enabler of more successful Assess step completions in Locations B and C than Location A was the greater engagement of local coaches/personnel in reinforcing the importance of completing the Assess step.

In contrast, the barriers to successful implementation and reach of the Reflect and Connect steps were much less impactful and more amenable to strategies aimed at overcoming them compared to the Assess step. Of the parents of players scoring in the high-risk ranges, only two were unable to be contacted for further feedback and support. Notably, only the children of those two parents failed to demonstrate improvements on the mental health outcome measures at post-assessment. Thus, whilst the parent-focused approach to following-up on young people in high-risk ranges was successfully implemented and was able to reach the majority of families, it may be important to consider additional steps for youth whose parents are uncontactable. This could include engaging with these young people directly or working with local coaches/program personnel to reach their parents.

Finally, with the exception of one session in one location that was unable to be delivered due to daylight saving time differences (Location B), all other Life-Fit workshops were delivered, and all players were accessed successfully via the teleconference format during the RISE training sessions. Minor barriers were encountered, such as lag in internet speed, and poor audio quality. However, these barriers were overcome by participants moving closer to the laptop and working with local coaches/personnel in the room to assist when lags occurred. Despite these challenges, players rated the workshops as highly satisfying and beneficial, at levels comparable to those which we have observed when the workshops were delivered in person (Dowell *et al.*, 2021; Waters *et al.*, 2021).

Taken together, the barriers and enablers to feasibility and reach at each step point to the importance of a strong collaborative partnership between researchers, program organisers, and local coaches/personnel, consistent with the CBPR framework (Minkler & Wallerstein, 2008). Moreover, the CBPR approach points to collaborative ways to address barriers in future studies. For example, providing greater training to local coaches/personnel about the Life-Fit system and the importance of pre- and post-assessments and providing incentives and recognition for their role in encouraging players to complete all assessments and to follow-up with parents, if required. The CBPR approach also highlights the importance of further formative research with sports program coordinators, parents, and youth beneficiaries to identify other strategies to improve assessment completions.

Although not a primary aim of this study, given the focus was on ensuring continued service provision during the pandemic, it was notable that gratitude and prosocial behaviour improved and anxiety symptoms declined from pre- to post-RISE assessments, and that there was no significant deterioration on the other mental health or wellbeing measures. Given the RISE program was implemented during the regular rugby league season, and even though the pandemic caused interruptions to training and games in all three locations during the season, prior research has shown that participation in team-based, contact sports within the club sports environment is associated with reduced anxiety symptoms and improved prosocial behaviour (e.g., Carreres-Ponsoda, Escartí-Carbonell, Cortell-Tormo, Fuster-Lloret, & Andreu, 2012; Moeijes, van Busschbach, Bosscher, & Twisk, 2018). Moreover, grit has been found to be higher among youth who participate in more vigorous physical activity and organised sports in general (e.g., Hein, Kalajas-Tilga, Koka, Raudsepp, & Tilga, 2019). Thus, while the present findings cannot speak to the efficacy of the Life-Fit system embedded within the RISE program relative to outcomes that might be gained by participation in the rugby league season in general, it is notable that declines in youth mental health and wellbeing that have been observed during the pandemic (Magson *et al.*, 2020; Racine *et al.*, 2021) were not observed in the present study. Further studies are required that include control groups of players participating in the regular rugby league season as well as in other non-sport organised activities. Further studies are also required that compare the efficacy and acceptability of integrated sports and mental health programs, such as the present one, relative to other approaches.

Taken together, the findings suggest that when a multi-technology approach to the provision of mental health and wellbeing services is required in the context of a community-based program for youth, it is likely to be feasible to implement, accessible to the majority of young people, and rated as satisfying and beneficial at levels commensurate with face-to-face implementation. Strong collaboration between researchers, organisational personnel, and local community members is important for achieving these outcomes. The findings from the present study accord with evidence from a recent meta-analysis which found promising support for the accelerated uptake of tele-mental health, internet-based, and mobile app-based interventions to continue mental health care during the COVID-19 pandemic (Rauschenberg *et al.*, 2021). All told, the present findings encourage the use of similar approaches when young people living in diverse communities are faced with challenges to the continued provision of organised sports programs and in-person mental health services.

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